BLUE ROCK
ENVIRONMENTAL, INC.

Mr. Robert Stone
Hazardous Materials Specialist
Humboldt County Health Department
Division of Environmental Health
100 H Street, Suite 100
Eureka, California 95501

May 19, 2006

Re: Report of Findings for MTBE Vertical Delineation
Former Cash Oil Arcata
421 J Street, Arcata, CA
HCDEH LOP No. 12302
Blue Rock Project No. NC-3

Dear Mr. Stone,

This report was prepared for Clyde Harvey by Blue Rock Environmental, Inc. (Blue Rock) and presents the results of recent soil and groundwater sampling activities for vertical delineation of MTBE at 421 J Street, Arcata, Humboldt County, California (site) (Figure 1).

In response to Blue Rock's *Closure Evaluation* dated February 27, 2006, the Humboldt County Department of Environmental Health (HCDEH) identified the only outstanding issue limiting site closure was the lack of vertical delineation of MTBE in soil and groundwater below the site, as indicated in their March 9, 2006 letter. Accordingly, Blue Rock submitted their *Workplan for Vertical Delineation* dated March 24, 2006, which proposed soil and groundwater sampling to assess the vertical extent of MTBE in soil and groundwater below the site. The HCDEH concurred with this workplan in a letter dated March 30, 2006. This report presents the results of the proposed work.

Background

Site Description

The former Cash Oil Arcata service station is located on the corner of J Street and Samoa Boulevard (State Highway 255) in Arcata, California (Figure 1), in an area of low topographic relief on the Arcata Bottoms.

Former Underground Storage Tanks

A gas station has occupied this site since approximately 1978. The Cash Oil Company began operating the station in 1989. In 1997, permission was granted by the HCDEH to upgrade the existing underground storage tanks (USTs). The UST system consisted of two (2) upgraded single-wall steel 10,000-gallon USTs and one (1) fiberglass 10,000-gallon UST. The USTs were located along the northern edge of the property and were plumbed to two (2) dispenser islands located in the center of the property (Figure 2). At the time of upgrade, the UST system was used to store and dispense unleaded gasoline.

In May 2000, Cash Oil Company sold the property and upgraded UST system to Golden Gate Petroleum of Martinez, California.

In January 2004, Beacom Construction (Beacom) of Fortuna, California, on behalf of Golden Gate Petroleum, removed the (3) 10,000-gallon USTs and associated fuel dispensers from the site.

On March 18, 2004, Beacom installed two (2) new 10,000-gallon USTs at the site. During the installation of these USTs monitoring well MW-1 was destroyed.

Discovery of Petroleum Release

In May 1997, during tank upgrade activities, soil and groundwater samples were collected from two borings (B-1 and B-2) that determined a release of petroleum had occurred from the UST system.

Site Investigation History

Subsurface investigation has been ongoing at the site since initial 1997. A total of approximately nine (9) borings (B-1 through B-3 and B-6 through B-11) have been drilled and seven (7) monitoring wells (MW-1 through MW-7) have been installed to date. Additionally, numerous soil and groundwater samples have been collected from boring, wells, and/or excavations through the course of corrective action at the site. Historical boring, well, and sample locations are shown on Figure 2, well construction data are summarized in Table 1, soil sample data are summarized in Table 2, and groundwater elevation and sample data are included in Table 3.

Petroleum Type Detected During Investigation

Through the course of investigation the following petroleum compounds have been detected in soil and/or groundwater samples: total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tert-butyl ether, tert-butanol, tert amyl methyl ether (MTBE, TBA, TAME). , methanol, and ethanol. The fuel additives methanol and ethanol have only been detected sporadically at low concentrations, and the additives di-isopropyl ether (DIPE) and ethyl tert-butyl ether (ETBE) have not been detected.

Summary of Hydrogeology

A total of approximately 15 individual borings (including temporary borings and those converted to wells) have been drilled and logged at the site. The maximum depth explored has been 20 feet bgs. Clays and silts have been logged mostly from baserock to the depth of 20 feet bgs. An isolated, thin bed (i.e. <2 ft thick) of sand was observed in MW-5 at a dept of 5 feet bgs. Additionally, sand was observed from 19 to 20 feet bgs in MW-5 and MW-7, but this sand was not observed in any of the other five wells drilled to 20 feet bgs. Based on currently available information, neither of these sands appear to be laterally continuous. Cross sections are shown on Figures 2a and 2b.

During drilling, groundwater has been first observed at depths ranging from approximately 5 to 10 feet bgs. Groundwater in the temporary borings and wells stabilizes around a depth of 5 feet bgs, with seasonal variations ranging from approximately 4 to 8 feet bgs.

Monitoring wells MW-1 through MW-7 have all been screened from 5 to 20 feet bgs. The monitoring wells appear to adequately monitor conditions of first encountered shallow groundwater in the silts and clays beneath the site.

Groundwater elevations from monitoring wells MW-1 through MW-7 were used to evaluate flow and gradient in the shallow water bearing zone since November 2001 (when installation of wells MW-5, 6, and 7 completed the current suite of wells) to November 2005. Groundwater elevations have ranged from approximately 8 to 12 feet msl (equating to depths of approximately 4 to 8 feet bgs). Groundwater flow during the 17 events evaluated has been consistently to the south-southeast at gradients ranging from approximately 0.005 to 0.015 ft/ft. This flow direction is consistent with local topography and toward the nearest surface water body (Arcata Marsh) located approximately 1,400 feet south of the site.

Summary of Remedial Activities

Clearwater Group (Clearwater) submitted a *Corrective Action Plan (CAP),* dated May 10, 2002 to the HCDEH. The *CAP* presented a summary of the hydrogeology and contamination. The report evaluated remedial alternatives and concluded that a combination of source soil removal, groundwater extraction from open excavation, and enhanced bioremediation using oxygen releasing compounds (ORC) would be the best remedial alternative for the site. An enhanced bioremediation background study was proposed in the *CAP*. Preparation of a *CAP* was requested by the HCDEH in a letter dated March 13, 2002. The *CAP* was approved by the HCDEH in a correspondence letter dated May 21, 2002.

Clearwater submitted a *Remedial Action Plan (RAP),* dated February 14, 2003 to the HCDEH for review. The *RAP* presented results of natural attenuation pilot testing and details for the excavation of impacted soil, excavation dewatering activities, and the use of enhanced bioremediation (ORC). These remedial activities were based on working in conjunction with future site renovation activities.

In January 2004, Clearwater supervised Beacom Construction of Fortuna, California in removal of the existing UST system. Soil samples collected for UST system removal contained detectable levels of TPHg, BTEX, MTBE, TBA, TAME, and lead (Pb) (Table 2). Additionally, a pit water sample was collected on January 15, 2004, which contained detectable concentrations of TPHg, BTEX, MTBE, TBA, and TAME. A subsequent pit water sample on January 20, 2004 also contained detectable concentrations of Pb (Table 3).

Remedial excavation activities followed immediately after the UST removal. The area of the excavation covered the majority of site (approximately 3,600 ft^2), except for the northeast corner where the building was located, and dug to a maximum depth of 12 feet bgs (Figures 2a & 2b). Well MW-1 was destroyed earlier, in preparation for remedial excavation and installation of new USTs. Well MW-3 was destroyed during excavation activities. Approximately 2,332 tons of petroleum impacted soil was excavated and transported to BioIndustries in Red Bluff, California for disposal. Approximately 13,000 gal. of petroleum impacted groundwater was pumped from the excavation, and transported to the Seaport facility in Redwood City, California for disposal.

During excavation activities, soil samples were collected from (1) excavated soil to document source removal and (2) final excavation dimensions to verify clean-up (Table 2).

Blue Rock estimated the TPHg mass removed in soil excavated using the average TPHg concentration of excavated soil and total excavated soil mass. Blue Rock estimates that approximately 1,548 lbs of TPHg were removed from the site through soil excavation.

The reduction in TPHg soil mass was intended to remove, or at least significantly reduce, the secondary source of groundwater impact, which results in continued partitioning of petroleum from the sorbed-phase to the dissolved-phase. If the sorbed-phase source is removed, partitioning of petroleum to the dissolved-phase decreases. This condition should result in declining dissolved-phase concentration over time following the excavation. In order to accelerate the decline in dissolved-phase petroleum compounds, Clearwater mixed approximately 1,020 pounds of oxygen-release compound (ORC) into the excavation backfill placed at or below the water table. ORC is designed to release oxygen into the groundwater slowly over time for the purpose of elevating dissolved-oxygen levels to support enhanced aerobic biodegradation of the residual dissolved-phase plume.

Remedial activities are presented in Clearwater's *Remedial Report of Findings*, dated February 10, 2004. The HCDEH concurred with Clearwater's recommendations in a letter dated March 8, 2004.

On March 18, 2004, Beacom pumped approximately 10,000 gallons of groundwater from a UST installation excavation proximal to MW-1. On March 29 and 30, 2004, Blue Rock discharged approximately 10,000 gallons of groundwater under permit that contained acceptable levels of MTBE into the City of Arcata's sewer system. Remedial activities are presented in Blue Rock's *First Quarter 2004 Groundwater Monitoring Report*, dated April 5, 2004.

Purpose and Scope of Field Activities

The goal of this phase of work was to (1) evaluate the vertical extent of MTBE in soil below 12 feet bgs, and (2) evaluate the vertical extent of MTBE in groundwater below 20 feet bgs, as requested in the HCDEH letter dated March 9, 2006.

In order to accomplish the first goal, two soil borings were performed. These borings were located where MTBE appeared to increase at depth in shallow soil samples previously collected at the site. Two soil borings with soil samples collected at depths of approximately 15, 25, and 35 feet bgs were completed (boring locations shown on Figure 2 and described below):

- DB-1: Located along the southern edge of the former USTs and where MTBE was detected at 1.7 mg/kg at 12 feet bgs. Samples were collected in native material below the remedial excavation limits.

- DB-2: Located downgradient of the former USTs/dispensers in native material outside of the remedial excavation adjacent to MW-2.

In order to accomplish the second goal, collection of deeper grab groundwater samples was completed. Grab groundwater samples were collected at a depth of approximately 25 ft bgs in each boring and attempts to collect grab groundwater samples at a depth of approximately 35 ft bgs were unsuccessful. The drilling locations are shown on Figure 2 and described below:

- HP-1: Located along the southern edge of the former USTs and where MTBE was detected at 1.7 mg/kg at 12 feet bgs.

- HP-2: Located downgradient of the former USTs/dispensers and in native material outside of the remedial excavation adjacent to MW-2.

- HP-3: Located downgradient of the former USTs/dispensers and MW-2 in native material adjacent to MW-6.

Field Activities

Drilling and Soil Sampling

On May 8, 2006, Blue Rock supervised the drilling of two direct push soil borings (DB-1 and DB-2) and three direct push hydropunch borings (HP-1, HP-2, HP-3) (Figure 2). Prior to drilling, soil boring permits were obtained from the HCDEH and right-of-entry agreements were obtained from appropriate parties, as needed, and the Underground Service Alert (USA) was notified. Prior to initiation of drilling activities, Blue Rock and drilling subcontractor personnel reviewed and signed a Site Safety Plan.

A Blue Rock scientist, working under the supervision of a Blue Rock California Professional Geologist, supervised all drilling activities. Drilling was performed by Fisch Environmental (Fisch), of Valley Springs, California, using a direct-push drill rig. Soil samples were collected at 15, 25, and 35 feet bgs. The soil borings were advanced to a maximum depth of 36 ft bgs. A Blue Rock scientist logged soil types in accordance with the Unified Soil Classification System. Additionally, soil samples were screened for the presence of volatile petroleum hydrocarbon vapors with a photo-ionizing organic vapor meter (OVM).

The soil samples were collected using polyethylene sleeves, covered with Teflon lined plastic caps, labeled, documented on a chain-of custody form, and placed on ice in a cooler for transport to the project laboratory.

Vertical Delineation Drilling and Grab Groundwater Sampling

Groundwater sampling activities for vertical delineation of groundwater impacts were accomplished using a direct-push drill-rig, equipped with 1.5-inch diameter drill-rod, to collect grab groundwater samples from a discrete depth. Drilling was performed by Fisch under the supervision of a Blue Rock scientist.

Drilling locations at HP-1, HP-2, and HP-3 were advanced to 25 feet bgs and 35 feet bgs in separate boreholes for the collection of depth discrete groundwater samples utilizing a Hydropunch® attachment to facilitate the collection of groundwater samples. Grab groundwater samples were collected using a ball check valve and the appropriate length of polyethylene tubing. Attempts to collect grab groundwater samples at a depth of 35 feet bgs were unsuccessful in all borings, as groundwater did not enter the sampling pints at this depth. Grab groundwater samples were placed in clean laboratory supplied 40 ml VOA containers, placed on ice, and shipped under chain of custody to the project laboratory.

Soil and Groundwater Sample Analyses

Kiff Analytical (Kiff), a DHS-Certified laboratory in Davis, California, analyzed the soil and water samples by for the following compounds:

The soil samples were analyzed for:

- TPHg, BTEX, and MTBE by EPA Method 8260B
- Percent Moisture by Standard Method 2540B

The groundwater samples were analyzed for:

- TPHg, BTEX, and MTBE by EPA Method 8260B

Investigation Results

Site Lithology and Hydrogeology

Soil borings DB-1 and DB-2 were advanced in areas which had been previously investigated to a depth of 20 feet bgs. However soil samples for laboratory analysis were only collected at a maximum depth of 12 feet bgs. Therefore, soil sample collection began at 15 feet bgs in both soil borings. The first 15 feet of the attached soil borings logs for DB-1 and DB-2 are reiterated from soil boring logs MW-3 and MW-2 respectively, which were logged and submitted previously by Clearwater Group.

Based on previous boring logs, clays and silts have been logged to 20 feet bgs. Based on soil samples collected from DB-1 and DB-2, a silty clay is present from approximately 20 to 36 feet bgs with increasing clay content with depth. Soil boring logs DB-1 and DB-2 are attached. Cross section diagrams depicting the deep lithology are presented in Figures 2a and 2b.

Groundwater was initially encountered depth of approximately 10 feet bgs in both borings. Soil samples collected from approximately 35 feet bgs appeared dry to moist. At a depth of approximately 35 feet bgs groundwater was not encountered.

Results of Soil Sample Analysis

Soil samples were successfully sent under chain-of-custody to the project laboratory. MTBE was detected in soil samples collected from 15 feet bgs in soil boring DB-1 only. All soil samples collected, except DB-1 at 15 feet, were below standard laboratory detection limits for TPHg, BTEX, and MTBE. MTBE concentrations in soil samples collected from DB-1 at 15 feet bgs was 0.26 mg/kg (Table 2 and Figure 3). Additionally, the recent and historical soil sampling data for MTBE are shown on Figures 2a, 2b, and 3. The laboratory reports attached.

Results of Grab Groundwater Sample Analysis

Grab groundwater samples were successfully sent under chain-of-custody to the project laboratory. The groundwater sample collected from HP-1, HP-2, and HP-3 at a depth of 25 feet bgs were below standard detection limits for TPHg and BTEX. MTBE was detected at concentrations of 2.5, 0.61, and 1.3 µg/L in groundwater samples collected from HP-1, HP-2, and HP-3 at 25 feet bgs, respectively (Table 3). The laboratory reports are attached.

Summary and Conclusions

Results of the deep subsurface investigation indicate that MTBE was the only analyte detected during this investigation. The only MTBE concentrations detected was in soil samples collected from DB-1 at 15 feet bgs, at a concentration of 0.26 mg/kg. MTBE was not detected in any other soil samples collected during this investigation. The vertical extent of sorbed-phase MTBE has been delineated below the site during this investigation as shown in Figure 2a. All soil samples collected were below standard laboratory detection limits for TPHg and BTEX.

Results from the grab groundwater samples collected below the screened interval of the existing monitoring wells at the site and offsite were below the NCRWQCB cleanup goal of 5 µg/L. The MTBE concentration detected in HP-1 at 25 feet bgs was 2.5 µg/L, which is significantly lower than the Pit Water sample collected (4,300 µg/L) in similar location at 12 feet bgs. The MTBE concentration detected in HP-2 at 25 feet bgs was 0.61 µg/L, which is significantly lower than the latest MW-2 sample collected (360 µg/L) in similar location at a screened depth of 3 to 20 feet bgs. The MTBE concentration detected in HP-3 at 25 feet bgs was 1.3 µg/L, which is similar to the latest MW-6 sample collected (1.0 µg/L) in similar location at a screened depth of 3 to 20 feet bgs.

Recommendations

Based on the data presented in this report and historical data Blue Rock recommends the following:

- The HCDEH grant regulator closure related to subject gasoline release by Cash Oil.
- Destroy the existing monitoring wells under HCDEH permit.
- Properly dispose of all investigative derived waste at the site.

Certification

This report was prepared under the supervision of a California Professional Geologist at Blue Rock. All statements, conclusions, and recommendations are based upon published results from past consultants, field observations by Blue Rock, and analyses performed by a state-certified laboratory as they relate to the time, location, and depth of points sampled by Blue Rock. Interpretation of data, including spatial distribution and temporal trends, are based on commonly used geologic and scientific principles. It is possible that interpretations, conclusions, and recommendations presented in this report may change, as additional data become available and/or regulations change.

Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

The service performed by Blue Rock has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

If you have any questions regarding this project, please contact us at (707) 441-1934.

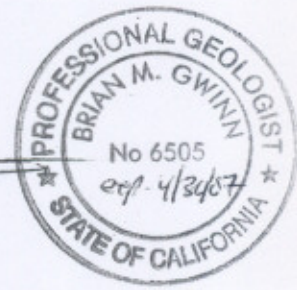
Sincerely,
Blue Rock Environmental, Inc.

Prepared by:

Scott Ferriman
Project Scientist

Reviewed by:

Brian Gwinn, PG
Principal Geologist



Attachments:

- Table 1: Well Construction Details
- Table 2: Soil Analytical Data
- Table 3: Groundwater Elevations and Analytical Data
- Figure 1: Site Location Map
- Figure 2: Site Plan
- Figure 2a: Cross-Section A-A'
- Figure 2b: Cross-Section B-B'
- Figure 3: Post-Remediation MTBE in Soil – 5/06
- Blue Rock's Boring Logs for DB-1 and DB-2
- Laboratory Reports and Chain of Custody Forms

Distribution:

- Mr. Clyde Harvey, 1785 Fort Douglas Circle, Salt Lake City, UT 84103
- Mr. Dennis O'Keefe, Golden Gate Petroleum, 501 Shell Ave, Martinez, CA 94553

Table 1
WELL CONSTRUCTION DETAILS
Former Cash Oil Arcata
421 J Street
Arcata, California
Blue Rock Project No. NC-003

Well Identification	Date Intstalled	Intstalled by	Casing Diameter (inches)	Total Depth (feet)	Blank Interval (feet)	Screened Interval (feet)	Slot Size (inches)	Filter Pack (feet)	Bentonite Seal (feet)	Cement (feet)
MW-1	8/31/00	Clearwater	2	20	0-3	3-20	0.02	2.5-20	1.5-2.5	0-1.5
(MW-1 was destroyed in 3/04 for installation of the new UST system.)										
MW-2	8/31/00	Clearwater	2	20	0-3	3-20	0.02	2.5-20	1.5-2.5	0-1.5
MW-3	8/31/00	Clearwater	2	20	0-3	3-20	0.02	2.5-20	1.5-2.5	0-1.5
(MW-3 was destroyed in 1/04 for remedial excavation.)										
MW-4	8/31/00	Clearwater	2	20	0-3	3-20	0.02	2.5-20	1.5-2.5	0-1.5
MW-5	11/8/01	Clearwater	2	20	0-3	3-20	0.02	2.5-20	1.5-2.5	0-1.5
MW-6	11/8/01	Clearwater	2	20	0-3	3-20	0.02	2.5-20	1.5-2.5	0-1.5
MW-7	11/8/01	Clearwater	2	20	0-3	3-20	0.02	2.5-20	1.5-2.5	0-1.5

Table 2
SOIL ANALYTICAL DATA
Former Cash Oil Arcata
421 J Street
Arcata, California
Blue Rock Project No. NC-003

Sample ID	Sample Depth (feet bgs)	Sample Date	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Methanol (mg/kg)	Ethanol (mg/kg)	Lead (mg/kg)
Soil Samples Collected at UST Removal															
SW-1@8'	8	1/15/04	<1	<0.005	<0.005	<0.005	<0.005	**0.16**	**0.022**	<0.005	<0.005	<0.005	--	--	**8.59**
SW-2@8'	8	1/15/04	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005	--	--	--
SW-3@8'	8	1/15/04	**2.2**	**0.15**	**0.56**	**0.043**	**0.21**	**1.0**	<0.025	<0.005	<0.005	<0.005	--	--	--
SW-4@8'	8	1/15/04	**6.2**	<0.005	<0.005	<0.005	<0.005	**0.38**	**0.64**	<0.005	<0.005	<0.005	--	--	**4.22**
SW-5@8'	8	1/15/04	**13**	**0.24**	**0.60**	**0.059**	**0.094**	**8.8**	**0.60**	<0.025	<0.025	**0.063**	--	--	--
SW-6@8'	8	1/15/04	<1	<0.005	<0.005	<0.005	<0.005	**0.034**	**0.017**	<0.005	<0.005	<0.005	--	--	**7.33**
D-1@2.5'	2.5	1/19/04	**920**	**2.2**	**57**	**18**	**99**	**67**	**1.9**	<0.05	<0.05	<0.05	--	--	--
D-2@2.5'	2.5	1/19/04	**44**	**0.13**	**0.083**	**1.5**	**4.2**	**1.1**	**0.38**	<0.005	<0.005	**0.35**	--	--	--
D-3@2.5'	2.5	1/23/04	<1	<0.005	<0.005	<0.005	**0.0092**	**0.11**	**0.02**	<0.005	<0.005	**0.0063**	--	--	--
D-4@2.5'	2.5	1/23/04	**4,700**	**8.8**	**120**	**63**	**390**	**41**	**3.4**	<0.25	<0.25	<0.25	--	--	--
P-1@2.5'	2.5	1/20/04	**10**	**0.49**	**0.085**	**0.15**	**0.22**	**2.1**	**0.10**	<0.005	<0.005	**0.14**	--	--	--
P-2@2.5'	2.5	1/22/04	**4.2**	**0.083**	**0.15**	**0.024**	**0.49**	**8.4**	**0.85**	<0.005	<0.005	**0.049**	--	--	--
Soil Samples Collected to Verify Removal of Impacted Soil During Remedial Excavation															
EX-1	stockpile	1/19/04	**53**	**0.87**	**6.4**	**1.2**	**6.0**	**8.5**	<0.50	<0.005	<0.005	**0.066**	--	--	--
EX-2	stockpile	1/20/04	**36**	**0.035**	**0.1**	**0.081**	**1.1**	**1.2**	**0.28**	<0.025	<0.025	**0.043**	--	--	--
EX-3	stockpile	1/20/04	**410**	**1.0**	**19**	**11**	**55**	**3.9**	**0.53**	<0.10	<0.10	**0.20**	--	--	**6.23**
EX-4	stockpile	1/21/04	**110**	**0.38**	**0.098**	**2.3**	**4.6**	**2.3**	**0.55**	<0.005	<0.005	**0.18**	--	--	--
EX-5	stockpile	1/22/04	**620**	**1.1**	**0.88**	**9.3**	**43**	**7.7**	**0.47**	<0.025	<0.025	**0.17**	--	--	--
EX-6	stockpile	1/23/04	<1	**0.0059**	<0.005	<0.005	<0.005	**0.24**	**0.1**	<0.005	<0.005	**0.0097**	--	--	--
Confirmation Samples Collected from Sidewalls and Bottom of Remedial Excavation															
EB-1@12'	12	1/20/04	<1	<0.005	<0.005	<0.005	<0.005	**1.7**	--	--	--	--	--	--	--
EB-2@7'	7	1/23/04	<1	<0.005	<0.005	<0.005	<0.005	**0.098**	--	--	--	--	--	--	--
EB-3@12'	12	1/23/04	<1	<0.005	<0.005	<0.005	<0.005	**0.64**	--	--	--	--	--	--	--
ES-1@8'	8	1/20/04	<1	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--
ES-2@8'	8	1/26/04	**1.4**	<0.005	<0.005	<0.005	<0.005	**0.13**	--	--	--	--	--	--	--
ES-3@8'	8	1/26/04	**1.5**	**0.014**	**0.079**	**0.01**	**0.072**	**0.19**	--	--	--	--	--	--	--
ES-4@8'	8	1/26/04	**17**	**0.24**	<0.025	**0.51**	**0.99**	**1.8**	--	--	--	--	--	--	--
ES-5@8'	8	1/26/04	**5.8**	**0.077**	**0.012**	**0.071**	**0.18**	**0.27**	--	--	--	--	--	--	--
ES-6@7'	7	1/26/04	<1	<0.005	<0.005	<0.005	<0.01	<0.005	--	--	--	--	--	--	--
ES-7@7'	7	1/26/04	**1.3**	<0.005	<0.005	<0.005	<0.01	<0.005	--	--	--	--	--	--	--

Table 2
SOIL ANALYTICAL DATA
Former Cash Oil Arcata
421 J Street
Arcata, California
Blue Rock Project No. NC-003

Sample ID	Sample Depth (feet bgs)	Sample Date	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Methanol (mg/kg)	Ethanol (mg/kg)	Lead (mg/kg)
Historical Investigation Soil Samples															
B-1	10	5/7/97	**27**	**0.057**	**0.15**	**1.4**	**2.7**	<1.3	--	--	--	--	--	--	--
B-2	10	5/7/97	**1.0**	<0.005	**0.0066**	**0.0079**	**0.009**	**0.084**	--	--	--	--	--	--	--
B-3	4	12/2/99	<1	<0.005	<0.005	<0.005	<0.005	**0.091**	--	--	--	--	--	--	--
B-6	4	12/2/99	**3.6**	<0.005	<0.005	<0.005	**0.0051**	**0.01**	<0.5	<0.02	<0.02	<0.02	--	--	--
B-7	3.5	12/2/99	<1	<0.005	<0.005	<0.005	<0.005	**0.023**	<0.5	<0.02	<0.02	<0.02	--	--	--
B-8	4	12/2/99	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.5	<0.02	<0.02	<0.02	--	--	--
B-9	4	12/2/99	**3.5**	**0.013**	<0.005	<0.005	**0.037**	**1.1**	<0.5	<0.02	<0.02	<0.02	--	--	--
B-10	4	12/2/99	<1	<0.005	<0.005	<0.005	<0.005	**0.61**	<0.5	<0.02	<0.02	**0.025**	--	--	--
B-11	5	8/31/00	**1.1**	**0.0052**	<0.005	<0.005	<0.005	**0.083**	<0.005	<0.005	<0.005	<0.005	<0.02	<0.01	--
B-11	10	8/31/00	<1	<0.005	<0.005	<0.005	<0.005	**0.14**	<0.005	<0.005	<0.005	<0.005	<0.02	<0.01	--
MW-1	5	8/31/00	<1	<0.005	<0.005	<0.005	<0.05	**0.018**	**0.0072**	<0.005	<0.005	<0.005	<0.02	<0.01	--
MW-1	10	8/31/00	<1	<0.005	<0.005	<0.005	<0.005	**0.025**	<0.005	<0.005	<0.005	<0.005	<0.02	<0.01	--
MW-2	5	8/31/00	<1	<0.005	<0.005	<0.005	<0.005	**0.60**	**0.034**	<0.005	<0.005	**0.0095**	<0.8	**0.03**	--
MW-2	10	8/31/00	<1	<0.005	<0.005	<0.005	<0.005	**0.62**	**0.014**	<0.005	<0.005	**0.01**	<0.8	<0.01	--
MW-3	5	8/31/00	**13**	**0.21**	**0.0062**	**0.099**	**0.026**	**5.9**	**1.2**	<0.005	<0.005	**0.21**	<1	<0.05	--
MW-3	10	8/31/00	<1	<0.005	<0.005	<0.005	<0.005	**1.6**	**0.86**	<0.005	<0.005	**0.11**	<0.5	<0.02	--
MW-4	5	8/31/00	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	--
MW-4	10	8/31/00	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	--
MW-5	5	11/8/01	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	--
MW-5	10	11/8/01	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.2	<0.02	--
MW-5	15	11/8/01	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.2	<0.02	--
MW-6	10	11/8/01	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.4	<0.02	--
MW-6	15	11/8/01	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.4	<0.02	--
MW-7	10	11/8/01	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	--
MW-7	15	11/8/01	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.2	<0.02	--

Table 2
SOIL ANALYTICAL DATA
Former Cash Oil Arcata
421 J Street
Arcata, California
Blue Rock Project No. NC-003

Sample ID	Sample Depth (feet bgs)	Sample Date	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Methanol (mg/kg)	Ethanol (mg/kg)	Lead (mg/kg)
Vertical Delineation Soil Samples															
DB-1-15'	15	5/8/06	<1	<0.005	<0.005	<0.005	<0.005	**0.26**	--	--	--	--	--	--	--
DB-1-25'	25	5/8/06	<1	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--
DB-1-35'	35	5/8/06	<1	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--
DB-2-15'	15	5/8/06	<1	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--
DB-2-25'	25	5/8/06	<1	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--
DB-2-35'	35	5/8/06	<1	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--

Notes

bgs: below ground surface
"--" Not analyzed, available or applicable
mg/kg = milligrams per kilogram
<###: Not detected above the method detection limit as shown
TPHg: Total petroleum hydrocarbons as gasoline by EPA Method 5030/8260B
BTEX by EPA Method 8260B
MTBE: Methyl tertiary butyl ether by EPA 8260B
TBA: Tertiary butanol by EPA 8260B
DIPE: Di isopropyl ether by EPA 8260B
ETBE: Ethyl tertiary butyl ether by EPA 8260B
TAME: Tertiary amyl methyl ether by EPA 8260B
Methanol: by EPA Method 8260B
Ethanol: by EPA method 8260B
Lead: Total Lead by EPA method 6010B

Table 3
GROUNDWATER ELEVATIONS
AND ANALYTICAL DATA
Former Cash Oil Arcata
421 J Street
Arcata, California
Blue Rock Project No. NC-003

Well Name	Sample Date	TOC (feet)	DTW (feet)	SPH (feet)	GWE (feet)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Methanol (µg/L)	Ethanol (µg/L)	Lead (µg/L)	DO (mg/L)
Grab Groundwater Samples																			
B-1	5/7/97	---	---	0.00	---	**9,900**	**880**	**52**	**650**	**690**	**100,000**	---	---	---	---	---	---	---	---
B-2	5/7/97	---	---	0.00	---	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<1	<1	<1	---	---	---	---
B-6	12/2/99	---	~4.5	0.00	---	**550**	**0.84**	**0.52**	<0.5	<0.5	**190**	<10	<1	<1	**11**	---	---	---	---
B-7	12/2/99	---	~4	0.00	---	<250	<1	<1	<1	<1	**1,200**	<50	<2.5	<2.5	**13**	---	---	---	---
B-8	12/2/99	---	~4.5	0.00	---	<50	<0.5	<0.5	<0.5	<0.5	**3.3**	<10	<1	<1	<1	---	---	---	---
B-9	12/2/99	---	~5	0.00	---	**2,600**	**39**	<10	<10	<10	**12,000**	**1,200**	<25	<25	**220**	---	---	---	---
B-10	12/2/99	---	~5	0.00	---	**2,600**	<10	<10	<10	<10	**13,000**	**780**	<25	<25	**380**	---	---	---	---
B-11	8/31/00	---	~11	0.00	---	**54**	<0.5	<0.5	<0.5	**1.3**	**340**	<5	<0.5	<0.5	**4.9**	<100	<10	---	---
Pit Water	1/15/04	---	---	sheen	---	**42,000**	**740**	**5,900**	**1,200**	**4,600**	**13,000**	**2,000**	<25	<25	**57**	---	---	---	---
Pit Water	1/20/04	---	---	0.00	---	**16,000**	**95**	**610**	**270**	**840**	**4,300**	---	---	---	---	---	---	**16**	---
Water Tank	3/19/04	---	---	0.00	---	**140**	<0.5	<0.5	<0.5	<1	**180**	---	---	---	---	---	---	---	---
HP-1-25'	5/8/06	---	---	0.00	---	<50	<0.5	<0.5	<0.5	<0.5	**2.5**	---	---	---	---	---	---	---	---
HP-2-25'	5/8/06	---	---	0.00	---	<50	<0.5	<0.5	<0.5	<0.5	**0.61**	---	---	---	---	---	---	---	---
HP-3-25'	5/8/06	---	---	0.00	---	<50	<0.5	<0.5	<0.5	<0.5	**1.3**	---	---	---	---	---	---	---	---
Monitoring Well Groundwater Samples																			
MW-1	9/11/00	98.70	6.11	0.00	92.59	<50	<0.3	<0.3	<0.3	<0.6	**28.2**	<500	<0.5	<0.5	<0.5	---	---	---	---
	10/16/00	98.70	6.11	0.00	92.59	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Screen	11/16/00	98.70	4.73	0.00	93.97	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3'-20'	12/12/00	98.70	4.60	0.00	94.10	<50	<0.3	<0.3	<0.3	<0.6	**87**	<500	<0.5	<0.5	**22**	---	---	---	---
	1/22/01	98.70	4.99	0.00	93.71	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/16/01	98.70	4.70	0.00	94.00	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	3/8/01	98.70	4.53	0.00	94.17	**120**	<0.5	<0.5	<0.5	**44**	**42**	<5	<0.5	<0.5	**9**	<50	<5	---	---
	6/6/01	98.70	5.51	0.00	93.19	<50	<0.5	<0.5	<0.5	<0.5	**37**	**8.7**	<0.5	<0.5	**2.5**	<200	<5	---	---
	9/4/01	98.70	6.37	0.00	92.33	<50	<0.5	<0.5	<0.5	<0.5	**61**	<5	<0.5	<0.5	**2.3**	---	---	---	---
	11/16/01	12.81	4.18	0.00	8.63	<50	<0.5	<0.5	<0.5	<0.5	**15**	<5	<0.5	<0.5	**1.8**	<100	<5	---	---
	2/8/02	12.81	3.98	0.00	8.83	<50	<0.5	<0.5	<0.5	<0.5	**40**	**9.4**	<0.5	<0.5	**3.4**	---	---	---	---
	5/3/02	12.81	4.53	0.00	8.28	<50	<0.5	<0.5	<0.5	<0.5	**11**	**8.8**	<0.5	<0.5	**1.1**	---	---	---	---
	8/29/02	16.19	6.26	0.00	9.93	<50	<0.5	<0.5	<0.5	<0.5	**17**	**16**	<0.5	<0.5	**1.4**	---	---	---	---
	11/14/02	16.19	5.95	0.00	10.24	<50	<0.5	<0.5	<0.5	<0.5	**11**	<5	<0.5	<0.5	**1.2**	---	---	---	---
	2/11/03	16.19	4.54	0.00	11.65	<50	<0.5	<0.5	<0.5	<0.5	**8.2**	**10**	<0.5	<0.5	**0.9**	---	---	---	---
	5/7/03	16.19	4.07	0.00	12.12	<50	<0.5	<0.5	<0.5	<0.5	**9.1**	**13**	<0.5	<0.5	**0.76**	---	---	---	---
	8/4/03	16.19	5.80	0.00	10.39	<50	<0.5	<0.5	<0.5	<0.5	**6.4**	**10**	<0.5	<0.5	**0.81**	---	---	---	---
	11/3/03	16.19	6.54	0.00	9.65	<50	<0.5	<0.5	<0.5	<0.5	**8.3**	<5	<0.5	<0.5	**0.72**	---	---	---	---
	3/8/04	16.19	4.04	0.00	12.15	<50	<0.5	<0.5	<0.5	<0.5	**20**	<5	<0.5	<0.5	<0.5	---	---	---	0.25
	3/18/04	MW-1 was destroyed during new UST system installation activities.																	

Table 3
GROUNDWATER ELEVATIONS
AND ANALYTICAL DATA
Former Cash Oil Arcata
421 J Street
Arcata, California
Blue Rock Project No. NC-003

Well Name	Sample Date	TOC (feet)	DTW (feet)	SPH (feet)	GWE (feet)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Methanol (µg/L)	Ethanol (µg/L)	Lead (µg/L)	DO (mg/L)
MW-2	9/11/00	98.10	5.19	0.00	92.91	1,120	<0.3	<0.3	<0.3	<0.6	3,130	<500	<0.5	<0.5	40.3	---	---	---	---
	10/16/00	98.10	5.21	0.00	92.89	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Screen	11/16/00	98.10	3.87	0.00	94.23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3'-20'	12/12/00	98.10	4.88	0.00	93.22	423	<0.3	<0.3	<0.3	<0.6	2,020	<500	<0.5	<0.5	<0.5	---	---	---	---
	1/22/01	98.10	4.21	0.00	93.89	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/16/01	98.10	4.01	0.00	94.09	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	3/8/01	98.10	3.92	0.00	94.18	<200	<2	<2	<2	<2	1,400	<20	<2	<2	18	<500	<20	---	---
	6/6/01	98.10	4.74	0.00	93.36	<500	<5	<5	<5	<5	1,200	<50	<5	<5	20	6,000	<50	---	---
	9/4/01	98.10	5.64	0.00	92.46	<50	<0.5	<0.5	<0.5	<0.5	1,100	100	<0.5	<0.5	17	---	---	---	---
	11/16/01	12.23	3.85	0.00	8.38	<100	<1	<1	<1	<1	710	18	<1	<1	12	<2,000	<10	---	---
	2/8/02	12.23	3.46	0.00	8.77	1,300	19	<10	<10	<10	3,600	140	<10	<10	100	---	---	---	---
	5/3/02	12.23	3.93	0.00	8.30	<1,000	<10	<10	<10	<10	4,300	250	<10	<10	150	---	---	---	---
	8/29/02	15.61	5.55	0.00	10.06	<1,000	<10	<10	<10	<10	3,100	<100	<10	<10	87	---	---	---	---
	11/14/02	15.61	5.24	0.00	10.37	220	<1	<1	<1	<1	2,200	16	<1	<1	67	---	---	---	---
	2/11/03	15.61	3.97	0.00	11.64	<1,000	11	<10	<10	<10	4,400	170	<10	<10	160	---	---	---	---
	5/7/03	15.61	3.53	0.00	12.08	<1,000	<10	<10	<10	<10	4,200	210	<10	<10	170	---	---	---	---
	8/4/03	15.61	5.05	0.00	10.56	<500	<5	<5	<5	<5	2,100	<50	<5	<5	64	---	---	---	---
	11/3/03	15.61	6.02	0.00	9.59	<500	<5	<5	<5	<5	1,800	<50	<5	<5	58	---	---	---	---
	3/8/04	15.61	3.87	0.00	11.74	<1,000	<10	<10	<10	<10	4,200	150	<10	<10	150	---	---	---	0.52
	5/17/04	15.61	4.62	0.00	10.99	<1,000	<10	<10	<10	<20	940	<100	<10	<10	34	---	---	---	0.76
	8/2/04	15.61	5.31	0.00	10.30	<200	<2	<2	<2	<2	1,000	---	---	---	---	---	---	---	1.53
	11/1/04	15.61	4.17	0.00	11.44	<200	<1.5	<1.5	<1.5	<1.5	700	---	---	---	---	---	---	---	1.19
	2/3/05	15.61	3.78	0.00	11.83	<200	<1.5	<1.5	<1.5	<1.5	1,100	---	---	---	---	---	---	---	1.90
	5/2/05	15.61	4.10	0.00	11.51	<150	<1.5	<1.5	<1.5	<1.5	820	---	---	---	---	---	---	---	0.57
	8/3/05	15.61	4.78	0.00	10.83	<50	<0.5	<0.5	<0.5	<0.5	370	---	---	---	---	---	---	---	0.85
	11/4/05	15.61	4.01	0.00	11.60	<50	<0.5	<0.5	<0.5	<0.5	360	---	---	---	---	---	---	---	1.34
MW-3	9/11/00	99.58	5.39	0.00	94.19	6,390	186	5	10.4	10.7	12,500	<500	<0.5	<0.5	1,150	---	---	---	---
	10/16/00	99.58	6.36	0.00	93.22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Screen	11/16/00	99.58	4.84	0.00	94.74	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3'-20'	12/12/00	99.58	4.76	0.00	94.82	29,200	499	<150	<150	<300	41,100	<250,000	<250	<250	2,280	---	---	---	---
	1/22/01	99.58	5.27	0.00	94.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/16/01	99.58	4.91	0.00	94.67	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	3/8/01	99.58	4.79	0.00	94.79	3,100	230	130	35	62	6,900	2,100	<10	<10	290	<10,000	<200	---	---
	6/6/01	99.58	5.93	0.00	93.65	<5,000	190	<25	<25	<25	16,000	5,000	<25	<25	530	<10,000	<1,000	---	---
	9/4/01	99.58	6.84	0.00	92.74	4,700	230	100	25	88	16,000	7,000	<20	<20	990	---	---	---	---
	11/16/01	13.70	4.55	0.00	9.15	10,000	720	590	250	970	22,000	4,200	<50	<50	1,200	<120,000	<500	---	---
	2/8/02	13.70	3.90	0.00	9.80	4,200	170	26	54	75	6,000	920	<20	<20	260	---	---	---	---
	5/3/02	13.70	4.62	0.00	9.08	2,700	110	<20	26	22	9,500	3,400	<20	<20	790	---	---	---	---
	8/29/02	17.08	6.74	0.00	10.34	1,800	80	<10	<10	<10	4,700	1,200	<10	<10	540	---	---	---	---
	11/14/02	17.08	6.38	0.00	10.70	4,300	120	<20	<20	<20	8,600	1,800	<20	<20	1,400	---	---	---	---
	2/11/03	17.08	4.73	0.00	12.35	4,500	200	<20	27	<20	11,000	2,800	<20	<20	760	---	---	---	---
	5/7/03	17.08	4.15	0.00	12.93	2,800	120	<20	26	26	5,700	1,200	<20	<20	430	---	---	---	---
	8/4/03	17.08	6.25	0.00	10.83	1,900	79	<10	<10	<10	5,500	1,500	<10	<10	420	---	---	---	---
	11/3/03	17.08	6.88	0.00	10.20	1,900	75	<10	<10	<10	4,600	1,500	<10	<10	380	---	---	---	---
	1/20/04	Removed during remedial soil excavation activities																	

Table 3
GROUNDWATER ELEVATIONS
AND ANALYTICAL DATA
Former Cash Oil Arcata
421 J Street
Arcata, California
Blue Rock Project No. NC-003

Well Name	Sample Date	TOC (feet)	DTW (feet)	SPH (feet)	GWE (feet)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Methanol (µg/L)	Ethanol (µg/L)	Lead (µg/L)	DO (mg/L)
MW-4	9/11/00	100.50	7.07	0.00	93.43	<50	**0.4**	<0.3	<0.3	<0.6	<10	<500	<0.5	<0.5	**3.7**	---	---	---	---
	10/16/00	100.50	7.97	0.00	92.53	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Screen	11/16/00	100.50	5.45	0.00	95.05	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3'-20'	12/12/00	100.50	6.08	0.00	94.42	<50	<0.3	<0.3	<0.3	<0.6	**2**	<500	<0.5	<0.5	<0.5	---	---	---	---
	1/22/01	100.50	5.79	0.00	94.71	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/16/01	100.50	5.29	0.00	95.21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	3/8/01	100.50	5.22	0.00	95.28	<50	<0.5	<0.5	<0.5	<0.5	**0.94**	<5	<0.5	<0.5	<0.5	<50	<5	---	---
	6/6/01	100.50	6.52	0.00	93.98	<50	<0.5	<0.5	<0.5	<0.5	**0.57**	<5	<0.5	<0.5	<0.5	<50	<5	---	---
	9/4/01	100.50	7.56	0.00	92.94	<50	<0.5	<0.5	<0.5	<0.5	**0.78**	<5	<0.5	<0.5	<0.5	---	---	---	---
	11/16/01	14.59	4.96	0.00	9.63	<50	<0.5	<0.5	<0.5	<0.5	**0.58**	<5	<0.5	<0.5	<0.5	<50	<5	---	---
	2/8/02	14.59	4.74	0.00	9.85	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	5/3/02	14.59	5.04	0.00	9.55	<50	<0.5	<0.5	<0.5	<0.5	**1.3**	<5	<0.5	<0.5	<0.5	---	---	---	---
	8/29/02	17.97	7.42	0.00	10.55	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	11/14/02	17.97	7.02	0.00	10.95	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	2/11/03	17.97	5.11	0.00	12.86	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	5/7/03	17.97	4.53	0.00	13.44	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	8/4/03	17.97	6.94	0.00	11.03	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	11/3/03	17.97	7.61	0.00	10.36	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	3/8/04	17.97	5.04	0.00	12.93	<50	<0.5	<0.5	<0.5	<0.5	**3.9**	<5	<0.5	<0.5	<0.5	---	---	---	0.12
	5/17/04	17.97	6.73	0.00	11.24	<50	<0.5	<0.5	<0.5	<0.5	**5.2**	<5	<0.5	<0.5	<0.5	---	---	---	0.84
	8/2/04	17.97	6.89	0.00	11.08	<50	<0.5	<0.5	<0.5	<0.5	**43**	---	---	---	---	---	---	---	1.99
	11/1/04	17.97	5.66	0.00	12.31	<50	<0.5	<0.5	<0.5	<0.5	**2.8**	---	---	---	---	---	---	---	1.38
	2/3/05	17.97	5.01	0.00	12.96	<50	<0.5	<0.5	<0.5	<0.5	**1.0**	---	---	---	---	---	---	---	1.92
	5/2/05	17.97	5.59	0.00	12.38	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	0.52
	8/3/05	17.97	6.52	0.00	11.45	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	0.88
	11/4/05	17.97	5.74	0.00	12.23	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	0.89
MW-5	11/16/01	12.27	5.18	0.00	7.09	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<50	<5	---	---
	2/8/02	12.27	4.39	0.00	7.88	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
Screen	5/3/02	12.27	4.56	0.00	7.71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
3'-20'	8/29/02	15.64	5.97	0.00	9.67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	11/14/02	15.64	5.80	0.00	9.84	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	2/11/03	15.64	4.59	0.00	11.05	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	5/7/03	15.64	4.33	0.00	11.31	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	8/4/03	15.64	5.48	0.00	10.16	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	11/3/03	15.64	6.57	0.00	9.07	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	3/8/04	15.64	4.49	0.00	11.15	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	0.38
	5/17/04	15.64	4.98	0.00	10.66	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	0.78
	8/2/04	15.64	5.69	0.00	9.95	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	1.89
	11/1/04	15.64	4.86	0.00	10.78	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	1.36
	2/3/05	15.64	4.60	0.00	11.04	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	2.29
	5/2/05	15.64	4.64	0.00	11.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	0.67
	8/3/05	15.64	5.22	0.00	10.42	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	1.14
	11/4/05	15.64	4.93	0.00	10.71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	0.79

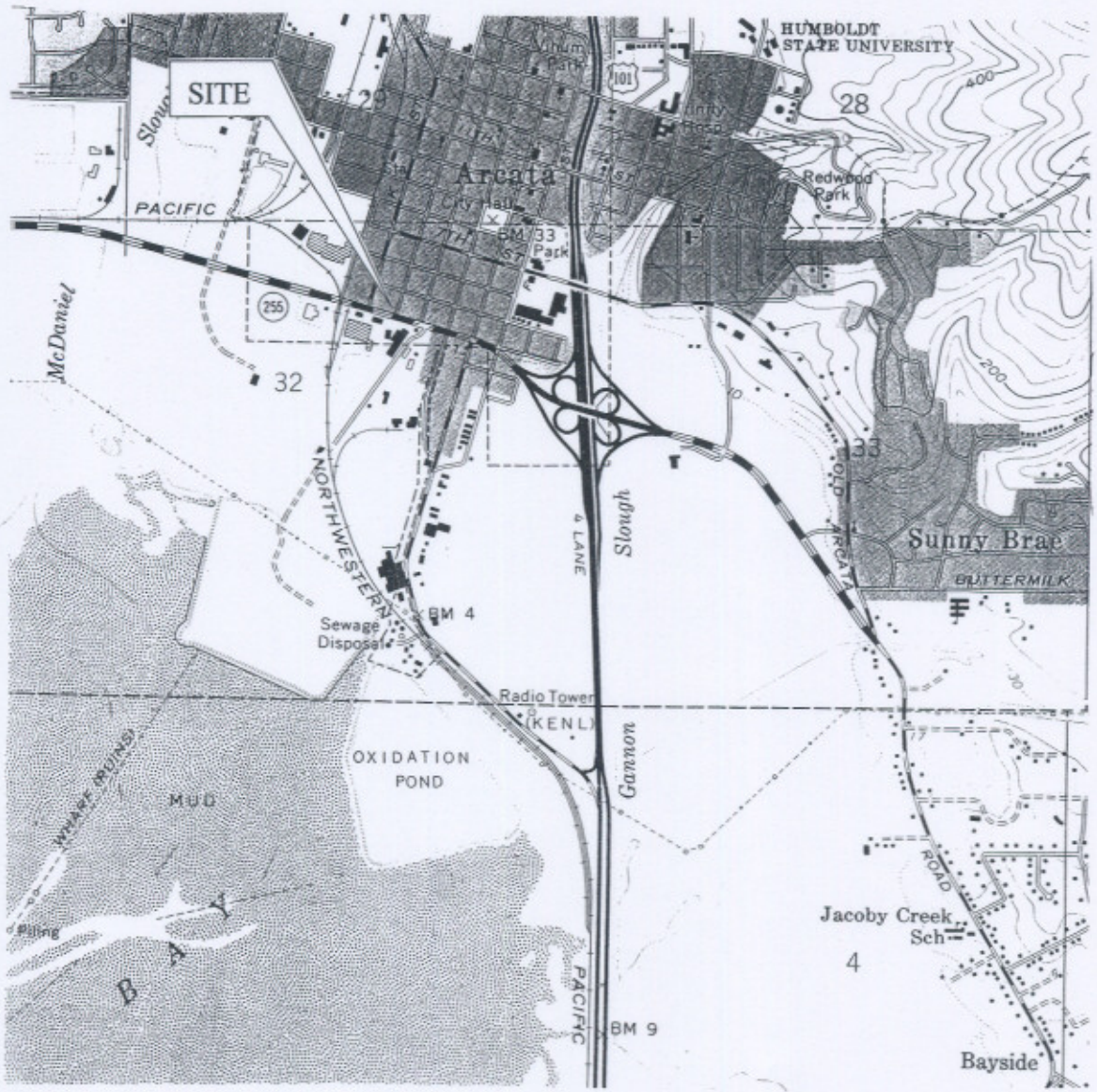
Table 3
GROUNDWATER ELEVATIONS
AND ANALYTICAL DATA
Former Cash Oil Arcata
421 J Street
Arcata, California
Blue Rock Project No. NC-003

Well Name	Sample Date	TOC (feet)	DTW (feet)	SPH (feet)	GWE (feet)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Methanol (µg/L)	Ethanol (µg/L)	Lead (µg/L)	DO (mg/L)
MW-6	11/16/01	11.41	4.51	0.00	6.90	<50	<0.5	<0.5	<0.5	<0.5	**0.90**	<5	<0.5	<0.5	<0.5	<50	<5	---	---
	2/8/02	11.41	4.15	0.00	7.26	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
Screen	5/3/02	11.41	4.13	0.00	7.28	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
3'-20'	8/29/02	14.78	5.36	0.00	9.42	<50	<0.5	<0.5	<0.5	<0.5	**0.68**	<5	<0.5	<0.5	<0.5	---	---	---	---
	11/14/02	14.78	5.19	0.00	9.59	<50	<0.5	<0.5	<0.5	<0.5	**1.0**	<5	<0.5	<0.5	<0.5	---	---	---	---
	2/11/03	14.78	4.16	0.00	10.62	<50	<0.5	<0.5	<0.5	<0.5	**0.80**	<5	<0.5	<0.5	<0.5	---	---	---	---
	5/7/03	14.78	3.90	0.00	10.88	<50	<0.5	<0.5	<0.5	<0.5	**0.60**	<5	<0.5	<0.5	<0.5	---	---	---	---
	8/4/03	14.78	4.90	0.00	9.88	<50	<0.5	<0.5	<0.5	<0.5	**0.65**	<5	<0.5	<0.5	<0.5	---	---	---	---
	11/3/03	14.78	6.11	0.00	8.67	<50	<0.5	<0.5	<0.5	<0.5	**1.5**	<5	<0.5	<0.5	<0.5	---	---	---	---
	3/8/04	14.78	4.08	0.00	10.70	<50	<0.5	<0.5	<0.5	<0.5	**0.51**	<5	<0.5	<0.5	<0.5	---	---	---	0.12
	5/17/04	14.78	4.42	0.00	10.36	<50	<0.5	<0.5	<0.5	<0.5	**0.60**	<5	<0.5	<0.5	<0.5	---	---	---	0.80
	8/2/04	14.78	5.07	0.00	9.71	<50	<0.5	<0.5	<0.5	<0.5	**0.72**	---	---	---	---	---	---	---	1.73
	11/1/04	14.78	4.32	0.00	10.46	<50	<0.5	<0.5	<0.5	<0.5	**2.3**	---	---	---	---	---	---	---	1.23
	2/3/05	14.78	4.15	0.00	10.63	<50	<0.5	<0.5	<0.5	<0.5	**0.68**	---	---	---	---	---	---	---	2.34
	5/2/05	14.78	4.19	0.00	10.59	<50	<0.5	<0.5	<0.5	<0.5	**0.56**	---	---	---	---	---	---	---	0.61
	8/3/05	14.78	4.60	0.00	10.18	<50	<0.5	<0.5	<0.5	<0.5	**0.62**	---	---	---	---	---	---	---	0.49
	11/4/05	14.78	4.34	0.00	10.44	<50	<0.5	<0.5	<0.5	<0.5	**1.0**	---	---	---	---	---	---	---	1.20
MW-7	11/16/01	11.91	5.19	0.00	6.72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<50	<5	---	---
	2/8/02	11.91	4.67	0.00	7.24	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
Screen	5/3/02	11.91	5.06	0.00	6.85	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
3'-20'	8/29/02	15.28	6.20	0.00	9.08	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	11/14/02	15.28	5.83	0.00	9.45	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	2/11/03	15.28	5.12	0.00	10.16	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	5/7/03	15.28	4.75	0.00	10.53	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	8/4/03	15.28	5.77	0.00	9.51	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	11/3/03	15.28	6.84	0.00	8.44	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	---
	3/8/04	15.28	4.96	0.00	10.32	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	0.15
	5/17/04	15.28	5.23	0.00	10.05	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	---	---	---	0.69
	8/2/04	15.28	6.06	0.00	9.22	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	1.64
	11/1/04	15.28	5.26	0.00	10.02	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	1.28
	2/3/05	15.28	4.97	0.00	10.31	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	2.31
	5/2/05	15.28	5.01	0.00	10.27	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	0.58
	8/3/05	15.28	5.50	0.00	9.78	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	0.55
	11/4/05	15.28	5.07	0.00	10.21	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---	---	0.49
					MCL	---	1	150	300	1,750	13								
					Taste & odor threshold	5	---	42	29	17	---								
					NCRWQCB Cleanup Goals	<50	0.5	42	29	17	5								

Notes :

TOC: Top of well casing surveyed to established benchmark.
DTW: Depth to water as referenced to top of casing.
SPH: Separate phase hydrocarbon on top of groundwater.
GWE: Groundwater elevation as referenced to benchmark.
µg/L = micrograms per liter = parts per billion = ppb
MCL: maximum contaminant level, a Federal drinking water standard
<###: Not detected in concentrations exceeding the indicated laboratory detection limit
DO: Dissloved oxygen collected using YSI meter (downhole measurement)

TPHg: Total petroleum hydrocarbons as gasoline by Method 5030/8260B
MTBE: Methyl tertiary butyl ether by Method 8260B
TBA: Tertiary butyl alcohol by Method 8260B
DIPE: Di isopropyl ether by Method 8260B
ETBE: Ethyl tertiary butyl ether by Method 8260B
TAME: Tertiary amyl methyl ether by Method 8260B
Lead: Dissolved lead by EPA Method 200.9
NCRWQCB: North Coast Region Water Quality Control Board



SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

CONTOUR INTERVAL 40 FEET

QUADRANGLE LOCATION

MAP SOURCE: USGS Arcata South Quadrangle

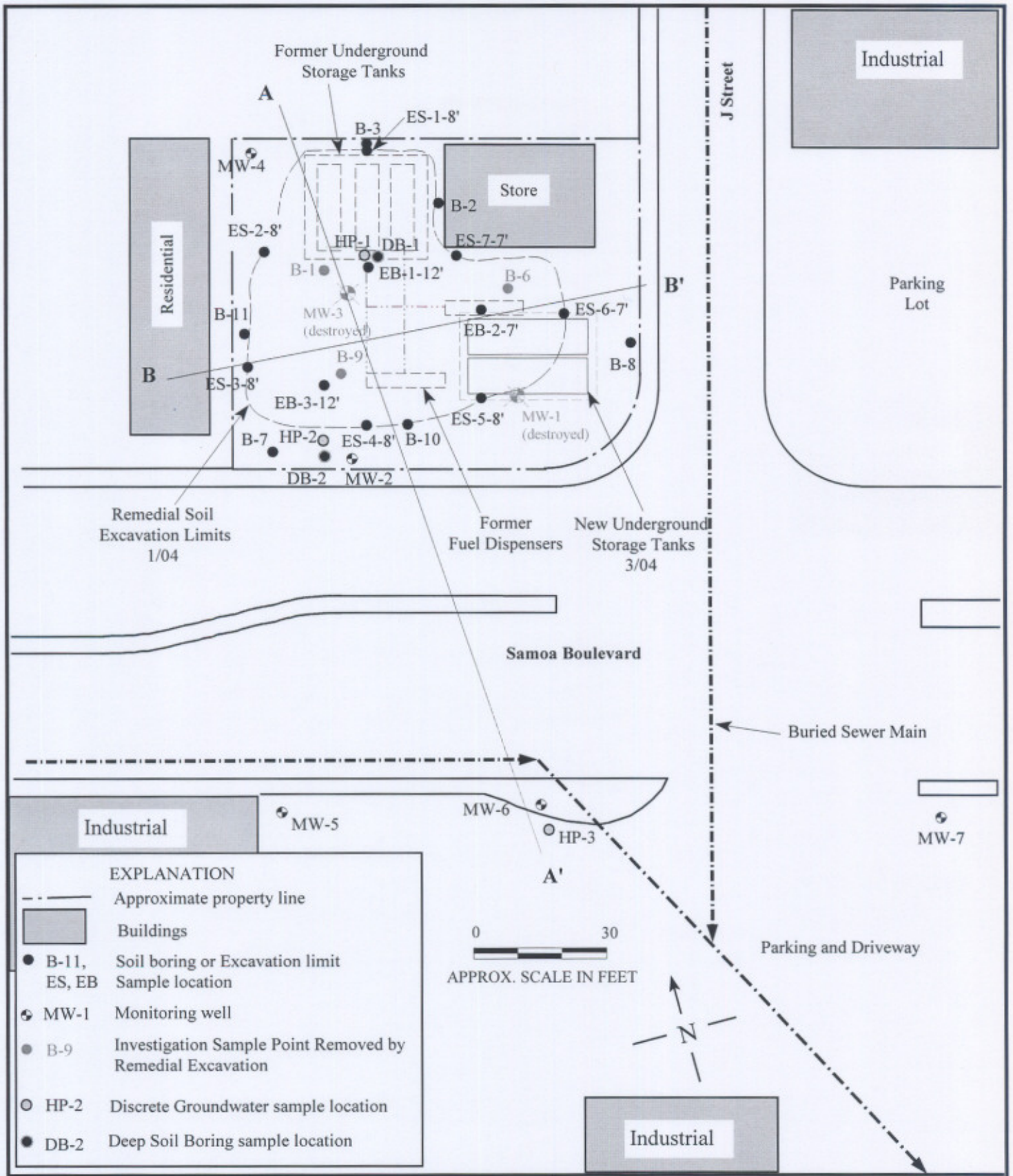
N

Site Location Map

Former Cash Oil Arcata
421 J Street
Arcata, California

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Date	Figure
NC-003	**4/04**	**1**

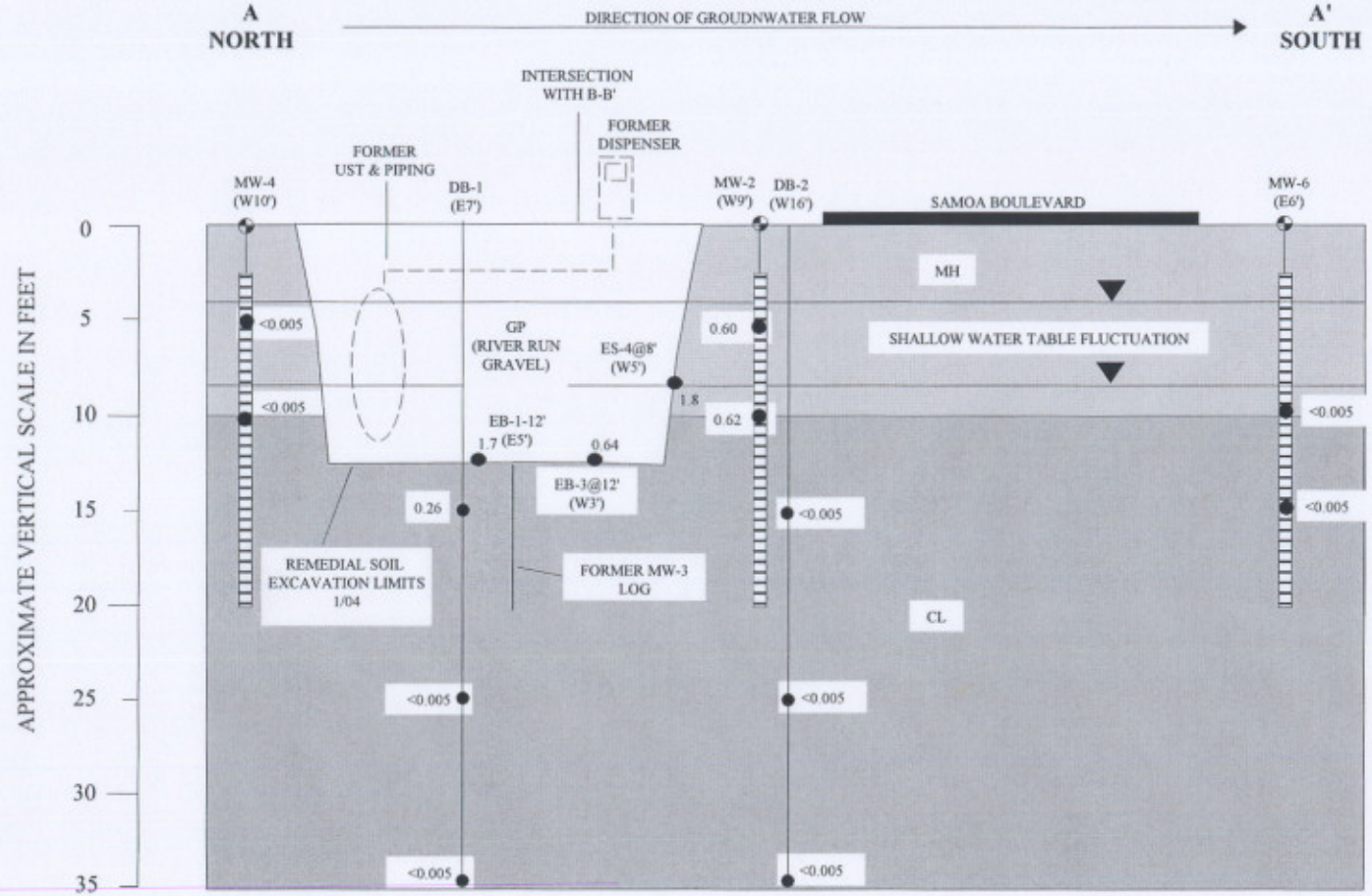


Site Plan

Former Cash Oil Arcata
421 J Street
Arcata, California

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Report Date	Figure
NC-003	5/06	2



EXPLANATION

- ELASTIC CLAYEY SILT (MH)
- SILTY CLAY (CL)
- RIVER RUN GRAVEL FILL (GP)
- STABLIZED WATER IN MONITORING WELLS
- SOIL SAMPLE
- 1.7 MTBE CONCENTRATION (mg/kg) SOIL SAMPLES
- MW-4 BORING/WELL I.D.
- (W5') DIRECTION AND DISTANCE FROM SECTION LINE TO BORING/WELL
- LOGGED & SCREENED INETERVAL

0' 30'
10'

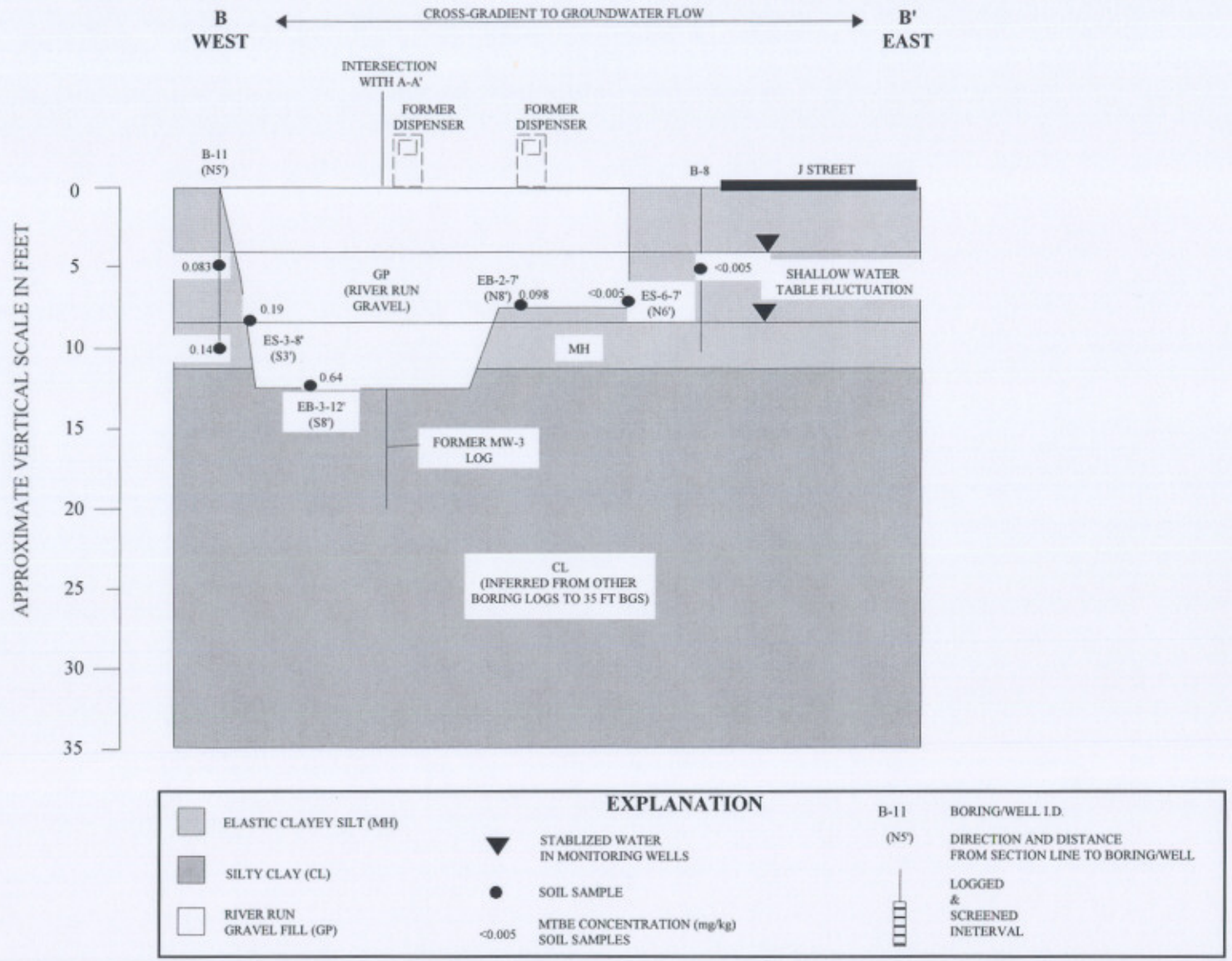
APPROXIMATE SCALE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

Cross-Section A-A'

Former Cash Oil Arcata
421 J Street
Arcata, CA

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Figure Date	Figure
NC-3	5/06	2a



0' 30'

10'

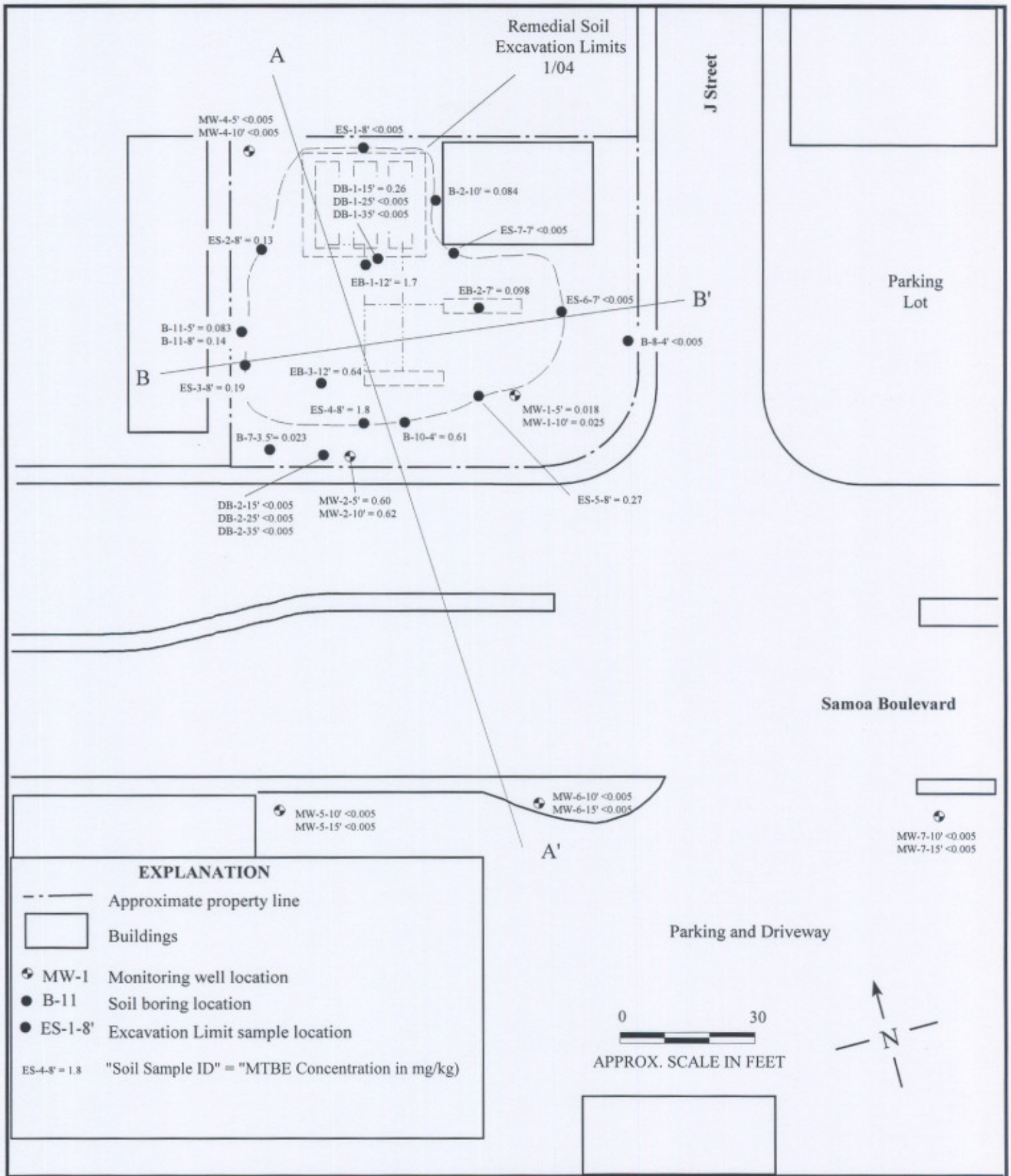
APPROXIMATE SCALE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

Cross-Section B-B'

Former Cash Oil Arcata
421 J Street
Arcata, CA

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Figure Date	Figure
NC-3	5/06	2b



Post-Remedial Excavation MTBE in Soil - 5/06
Former Cash Oil Arcata
421 J Street
Arcata, California

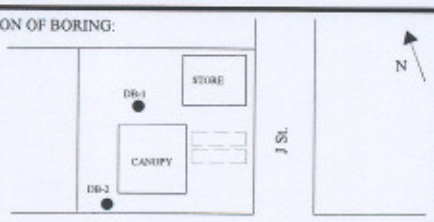
BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Report Date	Figure
NC-3	5/06	3

SOIL BORING LOG: DB-1

BLUE ROCK ENVIRONMENTAL, INC.

FIELD LOCATION OF BORING:



DRILLING CONTRACTOR:	BORING DIAMETER:	CLIENT/LOCATION:	
Fisch Environmental	1.5 inches	Clyde Harvey, 421 J St., Arcata, CA	
DRILL RIG OPERATOR:	BORING DEPTH:	SCREEN SLOT SIZE:	DRILLING DATE:
Dave	35 feet	NA	5/8/06
DRILL RIG TYPE:	WELL DEPTH:	WELL MATERIAL:	FILTER PACK:
Geoprobe	NA	NA	NA
WELL SEAL / BOREHOLE FILL:		PLANNED USE:	LOGGED BY:
Neat Cement		Sampling	James Linderman
SAMPLING METHOD:		MONITORING INST:	APPROVED BY:
Discrete sampler		Thermo 580B	Brian Gwinn, PG
FIRST ENCOUNTERED WATER DEPTH:		STATIC WATER DEPTH - DATE:	
10 feet		See notes below.	

WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING: INTERVAL	SAMPLING: RECOVERY	OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	
Boring filled with neat cement.	▽	1–30	▼	▼	0		Asphalt & Baserock.
							Elastic Clayey SILT (MH); gray; medium to high plasticity; ~40% clay; **moist.**
			▼	▼	0		Silty CLAY w/ Sand (CL); gray; low to medium plasticity; ~15% coarse sand; ~40% silt; **saturated.**
			▼	▼	0		Silty CLAY w/ Sand (CL); gray; low to medium plasticity; ~5% coarse sand; ~40% silt; **moist to wet.**

SOIL BORING LOG: DB-1

BLUE ROCK ENVIRONMENTAL, INC.

FIELD LOCATION OF BORING:

DRILLING CONTRACTOR:	BORING DIAMETER:	CLIENT/LOCATION:	
Fisch Environmental	1.5 inches	Clyde Harvey, 421 J St., Arcata, CA	
DRILL RIG OPERATOR:	BORING DEPTH:	SCREEN SLOT SIZE:	DRILLING DATE:
Dave	35 feet	NA	5/8/06
DRILL RIG TYPE:	WELL DEPTH:	WELL MATERIAL:	FILTER PACK:
Geoprobe	NA	NA	NA
WELL SEAL / BORING FILL:		PLANNED USE:	LOGGED BY:
Neat Cement		Sampling	James Linderman
SAMPLING METHOD:		MONITORING INST:	APPROVED BY:
Discrete sampler		Thermo 580B	Brian Gwinn, PG
FIRST ENCOUNTERED WATER DEPTH:		STATIC WATER DEPTH - DATE:	
10 feet		See notes below.	

WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING: INTERVAL	SAMPLING: RECOVERY	OVM READING (PPM)	GRAPHIC LOG OR USCS CODE
Boring filled with neat cement.	DRY	31–60	▼	▼	0	

Silty CLAY (CL); orange-brown; gray mottling; low to medium plasticity; ~40% silt; **dry to moist**.

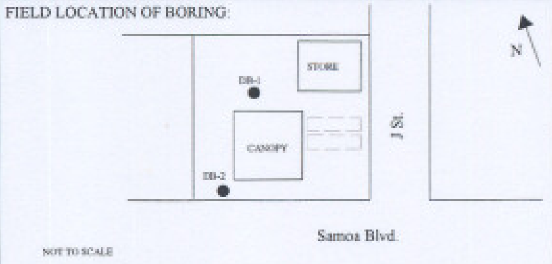
Groundwater Elevations:
Discrete sample screen depth 23'-26'. groundwater rose to ~10'.
Discrete sample screen depth 32'-36'. dry, no groundwater in hole.

SOIL BORING LOG: DB-2

BLUE ROCK ENVIRONMENTAL, INC.

Project: NC-3

FIELD LOCATION OF BORING:



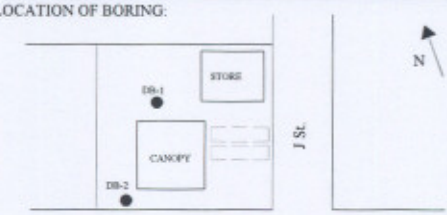
DRILLING CONTRACTOR: Fisch Environmental	BORING DIAMETER: 1.5 inches	CLIENT/LOCATION: Clyde Harvey, 421 J St., Arcata, CA	
DRILL RIG OPERATOR: Dave	BORING DEPTH: 35 feet	SCREEN SLOT SIZE: NA	DRILLING DATE: 5/8/06
DRILL RIG TYPE: Geoprobe	WELL DEPTH: NA	WELL MATERIAL: NA	FILTER PACK: NA
WELL SEAL / BOREHOLE FILL: Neat Cement		PLANNED USE: Sampling	LOGGED BY: James Linderman
SAMPLING METHOD: Discrete sampler		MONITORING INST: Thermo 580B	APPROVED BY: Brian Gwinn, PG
FIRST ENCOUNTERED WATER DEPTH: 10 feet		STATIC WATER DEPTH - DATE: See notes below.	

WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING INTERVAL	SAMPLING RECOVERY	OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	DESCRIPTION
Boring filled with neat cement.		0–2					Asphalt & Baserock.
	∇ (10)	2–10				MH	Elastic Clayey SILT (MH); dark brown; medium to high plasticity; ~40% clay; **moist.**
		10–23	14–16	14–16	0 (15)	CL	Silty CLAY w/ Sand (CL); dark brown; low to medium plasticity; ~15% coarse sand; ~40% silt; **moist to wet.**
		23–30	24–26	24–26	0 (25)	CL	Silty CLAY (CL); dark brown; low to medium plasticity; ~40% silt; **moist.**

SOIL BORING LOG: DB-2

BLUE ROCK ENVIRONMENTAL, INC.

FIELD LOCATION OF BORING:



DRILLING CONTRACTOR:	BORING DIAMETER:	CLIENT/LOCATION:	
Fisch Environmental	1.5 inches	Clyde Harvey, 421 J St., Arcata, CA	
DRILL RIG OPERATOR:	BORING DEPTH:	SCREEN SLOT SIZE:	DRILLING DATE:
Dave	35 feet	NA	5/8/06
DRILL RIG TYPE:	WELL DEPTH:	WELL MATERIAL:	FILTER PACK:
Geoprobe	NA	NA	NA
WELL SEAL / BORING FILL:		PLANNED USE:	LOGGED BY:
Neat Cement		Sampling	James Linderman
SAMPLING METHOD:		MONITORING INST:	APPROVED BY:
Discrete sampler		Thermo 580B	Brian Gwinn, PG
FIRST ENCOUNTERED WATER DEPTH:		STATIC WATER DEPTH - DATE:	
10 feet		See notes below.	

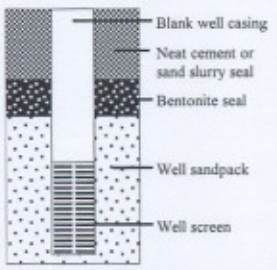
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING: INTERVAL	SAMPLING: RECOVERY	OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	
Boring filled with neat cement.	DRY	31–60	▼	▼	0		Silty CLAY (CL); reddish-brown; gray mottling; low to medium plasticity; ~40% silt; **dry to moist**.

Groundwater Elevations:
Discrete sample screen depth 23'-26'. groundwater rose to ~10'.
Discrete sample screen depth 32'-36'. dry, no groundwater in hole.

UNIFIED SOIL CLASSIFICATION SYSTEM - VISUAL CLASSIFICATION OF SOILS
(ASTM D-2488)

MAJOR DIVISIONS		GROUP SYMBOL	GROUP NAME	DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well-graded gravel Well-graded gravel with sand	Well-graded gravels or gravel-sand mixtures, little or no fines.
		GP	Poorly-graded gravel Poorly-graded gravel with sand	Poorly-graded gravels or gravel sand mixture, little or no fines.
		GM	Silty gravel Silty gravel with sand	Silty gravels, gravel-sand-silt mixtures.
		GC	Clayey gravel Clayey gravel with sand	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS	SW	Well-graded sand Well-graded sand with gravel	Well-graded sands or gravelly sands, little or no fines.
		SP	Poorly-graded sand Poorly-graded sand with gravel	Poorly-graded sands or gravelly sands, little or no fines.
		SM	Silty sand Silty sand with gravel	Silty sands, sand-silt mixtures.
		SC	Clayey sand Clayey sand with gravel	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS	ML	Silt; Silt with sand; Silt with gravel Sandy silt; Sandy silt with gravel Gravelly silt; Gravelly silt with sand	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		CL	Lean clay; Lean clay with sand; Lean clay with gravel Sandy lean clay; Sandy lean clay with gravel Gravelly lean clay; Gravelly lean clay with sand	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
	ELASTIC SILTS AND CLAYS	MH	Elastic silt; Elastic silt with sand; Elastic silt with gravel Sandy elastic silt; Sandy elastic silt with gravel Gravelly elastic silt; Gravelly elastic silt with sand	Inorganic silts, micaceous or diatamaceous fine sandy or silty soils, elastic silts.
		CH	Fat clay; Fat clay with sand; Fat clay with gravel Sandy fat clay; Sandy fat clay with gravel Gravelly fat clay; Gravelly fat clay with sand	Inorganic clays of high plasticity, fat clays.
HIGHLY ORGANIC SOILS		OL/OH	Organic soil; Organic soil with sand; Organic soil with gravel Sandy organic soil; Sandy organic soil with gravel Gravelly organic soil; Gravelly organic soil with sand	Organic silts and organic silt-clays of low plasticity. Organic clays of medium to high plasticity.
		Pt	Peat	Peat and other highly organic soils.

WELL CONSTRUCTION EXPLANTION



SOIL BORING NOTES:

Blow count represents the number of blows of a 140-lb hammer falling 30 inches per blow required to drive a sampler through the last 12 inches of an 18-inch penetration.

No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

S = Sampler sank into medium under the weight of the hammer (no blow count)
P = Sampler was pushed into medium by drilling rig (no blow count)
NR = No Recovery

SANDS & GRAVELS	BLOWS/FT
VERY LOOSE	0 - 5
LOOSE	5 - 12
MED. DENSE	12 - 37
DENSE	37 - 62
VERY DENSE	OVER 62

SILTS & CLAYS	BLOWS/FT
SOFT	0 - 5
FIRM	5 - 10
STIFF	10 - 20
VERY STIFF	20 - 40
HARD	OVER 40

▼ Approximate stabilized water level

▽ Approximate first encountered water level

NOTE: all percentages of lithological composition presented on the soil boring logs are approximate. They represent the best estimates of a Blue Rock geologist based on visual inspection in the field.

SOIL BORING LOG AND WELL CONSTRUCTION DIAGRAM LEGEND

BLUE ROCK ENVIRONMENTAL, INC.

KIFF Analytical LLC

Report Number : 49913
Date : 5/15/2006

Scott Ferriman
Blue Rock Environmental, Inc.
535 3rd Street, Suite 100
Eureka, CA 95501

Subject : 6 Soil Samples and 3 Water Samples
Project Name : Former Cash Oil Arcata
Project Number : NC-3

Dear Mr. Ferriman,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 49913
Date : 5/15/2006

Project Name : **Former Cash Oil Arcata**
Project Number : **NC-3**

Sample : **DB-1-15'** Matrix : Soil Lab Number : 49913-01
Sample Date :5/8/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Methyl-t-butyl ether (MTBE)	**0.26**	0.0050	mg/Kg	EPA 8260B	5/9/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	5/9/2006
Toluene - d8 (Surr)	93.8		% Recovery	EPA 8260B	5/9/2006
4-Bromofluorobenzene (Surr)	98.0		% Recovery	EPA 8260B	5/9/2006

Sample : **DB-1-25'** Matrix : Soil Lab Number : 49913-02
Sample Date :5/8/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	5/9/2006
Toluene - d8 (Surr)	93.9		% Recovery	EPA 8260B	5/9/2006
4-Bromofluorobenzene (Surr)	99.1		% Recovery	EPA 8260B	5/9/2006

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 49913
Date : 5/15/2006

Project Name : **Former Cash Oil Arcata**
Project Number : **NC-3**

Sample : **DB-1-35'** Matrix : Soil Lab Number : 49913-03
Sample Date :5/8/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/9/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	5/9/2006
Toluene - d8 (Surr)	95.4		% Recovery	EPA 8260B	5/9/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	5/9/2006

Sample : **DB-2-15'** Matrix : Soil Lab Number : 49913-04
Sample Date :5/8/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	5/10/2006
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	5/10/2006
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	5/10/2006

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 49913
Date : 5/15/2006

Project Name : **Former Cash Oil Arcata**
Project Number : **NC-3**

Sample : **DB-2-25'** Matrix : Soil Lab Number : 49913-05
Sample Date :5/8/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	5/10/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	5/10/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	5/10/2006

Sample : **DB-2-35'** Matrix : Soil Lab Number : 49913-06
Sample Date :5/8/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	5/10/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	5/10/2006
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	5/10/2006
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	5/10/2006

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 49913
Date : 5/15/2006

Project Name : **Former Cash Oil Arcata**
Project Number : **NC-3**

Sample : **HP-1-25'** Matrix : Water Lab Number : 49913-07
Sample Date :5/8/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	5/11/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	5/11/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	5/11/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	5/11/2006
Methyl-t-butyl ether (MTBE)	**2.5**	0.50	ug/L	EPA 8260B	5/11/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	5/11/2006
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	5/11/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	5/11/2006

Sample : **HP-2-25'** Matrix : Water Lab Number : 49913-08
Sample Date :5/8/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	5/10/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	5/10/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	5/10/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	5/10/2006
Methyl-t-butyl ether (MTBE)	**0.61**	0.50	ug/L	EPA 8260B	5/10/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	5/10/2006
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	5/10/2006
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	5/10/2006

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 49913
Date : 5/15/2006

Project Name : **Former Cash Oil Arcata**
Project Number : **NC-3**

Sample : **HP-3-25'** Matrix : Water Lab Number : 49913-09
Sample Date :5/8/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	5/10/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	5/10/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	5/10/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	5/10/2006
Methyl-t-butyl ether (MTBE)	**1.3**	0.50	ug/L	EPA 8260B	5/10/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	5/10/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	5/10/2006
4-Bromofluorobenzene (Surr)	112		% Recovery	EPA 8260B	5/10/2006

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 49913

Date : 5/15/2006

QC Report : Method Blank Data

Project Name : **Former Cash Oil Arcata**

Project Number : **NC-3**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/9/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/9/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/9/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/9/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/9/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	5/9/2006
Toluene - d8 (Surr)	101		%	EPA 8260B	5/9/2006
4-Bromofluorobenzene (Surr)	99.2		%	EPA 8260B	5/9/2006
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/10/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/10/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/10/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/10/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	5/10/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	5/10/2006
Toluene - d8 (Surr)	101		%	EPA 8260B	5/10/2006
4-Bromofluorobenzene (Surr)	101		%	EPA 8260B	5/10/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	5/11/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	5/11/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	5/11/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	5/11/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	5/11/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	5/11/2006
Toluene - d8 (Surr)	101		%	EPA 8260B	5/11/2006
4-Bromofluorobenzene (Surr)	99.4		%	EPA 8260B	5/11/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	5/10/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	5/10/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	5/10/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	5/10/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	5/10/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	5/10/2006
Toluene - d8 (Surr)	101		%	EPA 8260B	5/10/2006
4-Bromofluorobenzene (Surr)	109		%	EPA 8260B	5/10/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 49913

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 5/15/2006

Project Name : **Former Cash Oil Arcata**

Project Number : **NC-3**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	49911-01	<0.0050	0.0658	0.0662	0.0606	0.0646	mg/Kg	EPA 8260B	5/9/06	92.1	97.6	5.84	70-130	25
Toluene	49911-01	<0.0050	0.0658	0.0662	0.0588	0.0627	mg/Kg	EPA 8260B	5/9/06	89.4	94.7	5.75	70-130	25
Tert-Butanol	49911-01	<0.0050	0.329	0.331	0.270	0.290	mg/Kg	EPA 8260B	5/9/06	82.2	87.7	6.48	70-130	25
Methyl-t-Butyl Ether	49911-01	<0.0050	0.0658	0.0662	0.0608	0.0656	mg/Kg	EPA 8260B	5/9/06	92.4	99.1	6.93	70-130	25
Benzene	49913-04	<0.0050	0.0394	0.0400	0.0349	0.0356	mg/Kg	EPA 8260B	5/10/06	88.8	88.9	0.177	70-130	25
Toluene	49913-04	<0.0050	0.0394	0.0400	0.0314	0.0324	mg/Kg	EPA 8260B	5/10/06	79.9	80.9	1.29	70-130	25
Tert-Butanol	49913-04	<0.0050	0.197	0.200	0.180	0.192	mg/Kg	EPA 8260B	5/10/06	91.5	95.9	4.76	70-130	25
Methyl-t-Butyl Ether	49913-04	<0.0050	0.0394	0.0400	0.0389	0.0399	mg/Kg	EPA 8260B	5/10/06	98.8	99.7	0.856	70-130	25
Benzene	49913-07	<0.50	40.0	39.9	39.9	39.6	ug/L	EPA 8260B	5/11/06	99.6	99.3	0.320	70-130	25
Toluene	49913-07	<0.50	40.0	39.9	40.0	39.3	ug/L	EPA 8260B	5/11/06	100	98.4	1.63	70-130	25
Tert-Butanol	49913-07	<5.0	200	200	206	199	ug/L	EPA 8260B	5/11/06	103	99.5	3.31	70-130	25
Methyl-t-Butyl Ether	49913-07	2.5	40.0	39.9	43.5	43.0	ug/L	EPA 8260B	5/11/06	102	102	0.922	70-130	25
Benzene	49908-04	<0.50	40.0	40.0	36.4	36.0	ug/L	EPA 8260B	5/10/06	90.9	90.0	1.07	70-130	25
Toluene	49908-04	<0.50	40.0	40.0	36.5	35.9	ug/L	EPA 8260B	5/10/06	91.3	89.8	1.59	70-130	25
Tert-Butanol	49908-04	<5.0	200	200	191	198	ug/L	EPA 8260B	5/10/06	95.4	99.2	3.94	70-130	25
Methyl-t-Butyl Ether	49908-04	2.3	40.0	40.0	35.6	33.1	ug/L	EPA 8260B	5/10/06	83.0	76.8	7.83	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 49913

QC Report : Laboratory Control Sample (LCS)

Date : 5/15/2006

Project Name : **Former Cash Oil Arcata**

Project Number : **NC-3**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	0.0399	mg/Kg	EPA 8260B	5/9/06	102	70-130
Toluene	0.0399	mg/Kg	EPA 8260B	5/9/06	99.7	70-130
Tert-Butanol	0.200	mg/Kg	EPA 8260B	5/9/06	95.9	70-130
Methyl-t-Butyl Ether	0.0399	mg/Kg	EPA 8260B	5/9/06	106	70-130
Benzene	0.0399	mg/Kg	EPA 8260B	5/10/06	99.2	70-130
Toluene	0.0399	mg/Kg	EPA 8260B	5/10/06	101	70-130
Tert-Butanol	0.200	mg/Kg	EPA 8260B	5/10/06	97.4	70-130
Methyl-t-Butyl Ether	0.0399	mg/Kg	EPA 8260B	5/10/06	97.3	70-130
Benzene	40.0	ug/L	EPA 8260B	5/11/06	101	70-130
Toluene	40.0	ug/L	EPA 8260B	5/11/06	101	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/11/06	103	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/11/06	103	70-130
Benzene	40.0	ug/L	EPA 8260B	5/10/06	89.7	70-130
Toluene	40.0	ug/L	EPA 8260B	5/10/06	90.4	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/10/06	92.0	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/10/06	81.8	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

May 16, 2006

CLS Work Order #: CPE0329
COC #: 49913

Troy Turpen
KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project Name: Former Cash Oil Arcata

Enclosed are the results of analyses for samples received by the laboratory on 05/09/06 15:20. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

CALIFORNIA LABORATORY SERVICES

05/16/06 08:51

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Former Cash Oil Arcata
Project Number: NC-3
Project Manager: Troy Turpen

CLS Work Order #: CPE0329
COC #: 49913

CPE0329

KIFF Analytical LLC

2795 Second Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4808

California Lab Services
3249 Fitzgerald Rd.
Rancho Cordova, CA 95742
tel: (916) 638-7301 COC# 49913 Page 1 of 1

Project Contact (Hardcopy or PDF to): Troy Turpen

EDF Report? _X_ Yes __ No

Chain-of-Custody Record and Analysis Request

Company/Address: Kiff Analytical, LLC

Recommended but not mandatory to complete this section:
Sampling Company Log Code: BRSF

Phone No.: FAX No.:

Global ID: T0602300231

Project Number: NC-3
P.O. No.: 49913

EDF Deliverable to (Email Address): inbox@kiffanalytical.com

Project Name: Former Cash Oil Arcata

E-mail address: inbox@kiffanalytical.com

Project Address:

Analysis Request

Date due: May 16, 2006

For Lab Use Only

Sample Designation	Sampling Date	Sampling Time	Container: Glass Jar	Container: Poly	Container: Amber	Preservative: HCl	Preservative: HNO3	Preservative: Na2S2O3	Preservative: NONE	Matrix: WATER	Matrix: SOIL	Moisture Content	For Lab Use Only
DB-1-25'	5/8/06	1115	1						X		X	X	X
DB-1-35'	5/8/06	1135	1						X		X	X	X
DB-2-25'	5/8/06	0850	1						X		X	X	X
DB-2-35'	5/8/06	0910	1						X		X	X	X

	Date	Time		
Relinquished by:			Received by:	Remarks:
Relinquished by:			Received by:	
Relinquished by:	5-9-6	1520	Received by Laboratory:	Bill to: Accounts Payable

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Former Cash Oil Arcata
Project Number: NC-3
Project Manager: Troy Turpen

CLS Work Order #: CPE0329
COC #: 49913

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DB-1-25' (CPE0329-01) Soil	**Sampled: 05/08/06 11:15**	**Received: 05/09/06 15:20**							
% Moisture	**20**	1.0	%	1	CP03546	05/10/06	05/10/06	SM 2540B	
DB-1-35' (CPE0329-02) Soil	**Sampled: 05/08/06 11:35**	**Received: 05/09/06 15:20**							
% Moisture	**22**	1.0	%	1	CP03546	05/10/06	05/10/06	SM 2540B	
DB-2-25' (CPE0329-03) Soil	**Sampled: 05/08/06 08:50**	**Received: 05/09/06 15:20**							
% Moisture	**35**	1.0	%	1	CP03546	05/10/06	05/10/06	SM 2540B	
DB-2-35' (CPE0329-04) Soil	**Sampled: 05/08/06 09:10**	**Received: 05/09/06 15:20**							
% Moisture	**21**	1.0	%	1	CP03546	05/10/06	05/10/06	SM 2540B	

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Former Cash Oil Arcata
Project Number: NC-3
Project Manager: Troy Turpen

CLS Work Order #: CPE0329
COC #: 49913

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CP03546 - General Preparation										
Blank (CP03546-BLK1)				Prepared & Analyzed: 05/10/06						
% Moisture	ND	1.0	%							

CALIFORNIA LABORATORY SERVICES

05/16/06 08:51

KIFF Analytical	Project: Former Cash Oil Arcata	
2795 Second St. Suite 300	Project Number: NC-3	**CLS Work Order #: CPE0329**
Davis, CA 95616	Project Manager: Troy Turpen	COC #: 49913

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 49913

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Scott Ferrimen	California EDF Report? ☒ Yes ☐ No
Company / Address: Blue Rock Env - Eureka	Sampling Company Log Code:
Phone #: 707-441-1934 / Fax #:	Global ID: T0602300231
Project #: NC-3 / P.O. #:	EDF Deliverable To (Email Address): Scott@bluerockenv.com
Project Name: former Cash oil Arcata	Sampler Signature:
Project Address: 421 J Street Arcata CA	

Sample Designation	Date	Time	Sampling	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Preservative: HCl	Preservative: HNO_3	Preservative: None	Matrix: Water	Matrix: Soil	Matrix: Air	Analysis Request: MTBE (EPA 8260B) per EPA 8021 level @ 5.0 ppb	Analysis Request: MTBE (EPA 8260B) @ 0.5 ppb	Analysis Request: BTEX (EPA 8260B)	Analysis Request: TPH Gas (EPA 8260B)	Analysis Request: 5 Oxygenates (EPA 8260B)	Analysis Request: 7 Oxygenates (EPA 8260B)	Analysis Request: Lead Scav.(1,2 DCA & 1,2 EDB-EPA 8260B)	Analysis Request: Volatile Halocarbons (EPA 8260B)	Analysis Request: Volatile Organics Full List (EPA 8260B)	Analysis Request: Volatile Organics (EPA 524.2 Drinking Water)	Analysis Request: TPH as Diesel (EPA 8015M)	Analysis Request: TPH as Motor Oil (EPA 8015M)	Analysis Request: Total Lead (EPA 6010)	Analysis Request: W.E.T. Lead (STLC)	Analysis Request: % Moisture	TAT: 1 wk	For Lab Use Only
DB-1-15'	5/8/06	1100			X								X			X	X	X												X	01
DB-1-25'	"	1115			X								X			X	X	X											X	X	02
DB-1-35'	"	1135			X								X			X	X	X											X	X	03
DB-2-15'	"	840			X								X			X	X	X												X	04
DB-2-25'	"	850			X								X			X	X	X											X	X	05
DB-2-35'	"	910			X								X			X	X	X											X	X	06
HP-1-25'	"	1155		3					X			X				X	X	X												X	07
HP-2-25'	"	945		3					X			X				X	X	X												X	08
HP-3-25'	↓	1300		3					X			X				X	X	X												X	09

Relinquished by	Date	Time	Received by
Jason Linderman	5/8/06		Fed Ex
	050906	1013	Received by Laboratory: Kiff Analytical

Remarks:

Bill to:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
4.4		050906	1013	IR-1	Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 051805